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Contact: Linda McCandless, 315-787-2417

Geneva Experiment Station Increases its Capacity for Field Research

By Peter Seem

Background photo shows wide shot of part of the property on the West side of the recently acquired Gates Farm. Inset - Craig Ingerick (left) and Pete Griner (right) from Station's Field Research Unit check voltage in a section of deer fence on the property.

GENEVA, NY: The New York State Agricultural Experiment Station, in Geneva, NY, has added the 75-acre Gates Farm to the 730 acres of available research land being used by the Station for field trials. The additional land will allow the implementation of a new crop rotation schedule and insure the integrity of field trials at the Station.

"It is vital that we continue our efforts to provide high-quality research facilities for our faculty and staff, thus allowing them to continue to provide the best information on fruit and vegetable crop production and protection," said Bob Seem, associate director of the Experiment Station.

The Gates Farm will be divided between fruit and vegetable research. Some of the fruit field space will allow the Station's highly successful apple breeding program to expand under the leadership of Professor Susan Brown, while 15 acres are part of a study run by Professor George Abawi on soil health.

The farm was purchased from Rosalie Kneut in 2001, and is located on Gates Road in Geneva, NY, contiguous with the Station's Robbins and Lucey Farms. The Station's Field Research Unit, managed by Mark Scott, spent over 2,000 man-hours improving the farm's infrastructure to meet the needs of Station scientists. Improvements include access roads, a surface water management system, underground irrigation lines, deer fence and subsurface drainage, bringing the cost of the farm to $400,000.

"There was some second guessing about developing this farm during difficult financial times, but it is in such times when New York's farmers most need the support of their state institutions," said Seem.

Agriculture is one of New York's biggest industries. Gross earnings from New York's 37,000 farms topped $3 billion in 2002. However, both the earnings and the number of farms are down from previous years as consolidation and a slowing economy places greater demands on New York's food producers.

The addition of new faculty, the expansion of some programs at the Station over the last decade and the turnover of some research land for the development of the Cornell Agriculture and Food Technology Park have created a greater demand for field research space. In order to prevent overuse, an ideal crop rotation would allow only half of the fields to be used in a given year. Crops like alfalfa would be grown in the other half to help the soil restore nutrients and organic matter. In recent years, demand for field space at the Station was so high that as much as 80 percent of fields were in use during a given year. In light of the strain this places on soil health, Stephen Reiners, an associate professor in horticultural sciences, developed a crop rotation

plan with the aim of restoring soil quality.

Reiners identified lack of uniformity as the greatest problem researchers faced as a result of the heavy use of field space. In order to maximize the use of space, a large field project might use land that had been divided into different plots the year before. If one of those plots had been in a rest year and the other had not, there would be different levels of soil quality and compaction across the research trial.

"You could be looking at your results, and you'd have to ask yourself, 'Is this because of different products I've applied, or is this because of soil differences?'," said Reiners. Poor soil quality can also create additional strain on plants, making them more susceptible to diseases and pests.

Reiners explained that the goal of most field studies is to recreate the conditions on a working farm, where farmers are better able to predict land needs and plan appropriate rotation schedules.

"An effective rotation would have been very difficulty without the extra land," he said. "The Gates Farm will give us the additional space we need to give fields some rest." Rotation will allow researchers to better emulate commercial conditions and improve the applicability of their work to New York's fruit and vegetable producers.

"We are working hard to keep the Experiment Station the best facility of its kind in the country," said Seem. "The Gates Farm enhances our ability to carry out fruit and vegetable research."

The Experiment Station was established by an act of the state legislature in 1880 and began operating in 1882, with the state's purchase of an 80-acre farm for research trials. The Station became a part of Cornell University, New York's land-grant university, in 1923. The Station now includes campuses in Geneva, Fredonia, and Highland, NY, where scientists focus on food science, fruit, vegetable and turf research.

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New York State Agricultural Experiment Station, 630 West North Street, Geneva, New York 14456
Telephone: 315.787.2011

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